

## ORIGINAL ARTICLE

# Outcome of Corticosteroid Injection in Reducing the Intensity of Pain in Patients with Plantar Fasciitis

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## ABSTRACT

**Objective:** The purpose of this study is to determine the outcomes of corticosteroid injection in reducing the intensity of pain in patients with plantar fasciitis.

**Study Design:** Descriptive study

**Place and Duration:** Orthopaedic surgery department of Mardan Medical Complex, Mardan for the duration of 6 months from January 2021 to June 2021.

**Methods:** Sixty patients of both genders with ages 20-70 years were presented in this study. Age, gender, and BMI were all recorded after informed written permission obtained from those who were volunteer to participate. Patients who met the inclusion criteria for plantar fasciitis were given a single intra-heel injection of triamcinolone, and they were followed up in the outpatient department at intervals of three, six and nine weeks. The effectiveness of the intervention was evaluated in terms of pain reduction as determined by the Visual analogue scale (VAS). The full data set was analyzed using the SPSS 24.0 edition.

**Results:** In our study most of the cases were males 38 (63.3%) and rest 22 (36.7%) were females. Age with mean standard deviation was 37.55±17.13 years and had body mass index 25.13±10.43 kg/m<sup>2</sup>. Majority of the patients 21 (35%) were from age group 31-40 years followed by age group 41-50 in 18 (30%) cases. Pre injection mean pain score was 7.34±7.5 reduced to 1.03±4.9 after nine months of follow up. Recurrence of pain was found among 2 (3.3%) cases.

**Conclusion:** In this study we concluded that corticosteroid injection in reducing the intensity of pain in patients with plantar fasciitis was effective and useful with only 3.3% recurrence rate.

**Keywords:** Plantar fasciitis, Pain, VAS, Corticosteroid

## INTRODUCTION

Every year, almost one million Americans seek medical attention for plantar fasciitis—a condition that affects the foot and ankle. Despite the fact that the vast majority of instances of plantar fasciitis resolve after ten months, roughly 10% of people acquire a long-term problem.[1] In many cases, individuals seek treatment from their primary care doctors and foot specialists when the pain is so severe that it interferes with their regular activities or employment.[2]

The term "plantar fasciitis" refers to the inflammation of the plantar fascia, which causes heel discomfort. This may be the consequence of a single plantar fascia rupture or repeated microtrauma injury. During the non-inflamed stage of plantar fasciopathy, a condition known as plantar fasciosis is present.[3] An enthesopathy resulting from degenerative processes at the calcaneus-to-ligament attachment junction is known as periosteal enthesopathy (plantar fascia). People of all ages, especially middle-aged and older adults, might suffer from plantar fasciitis. Obesity, pesplanus, pescavus, and a shortened Achilles tendon are all intrinsic risk factors.[4] When it comes to risk variables that are not beyond our control, we have to look no farther than our own feet.[5] It has been shown that those who walk more than the average amount while at work have a greater chance of having this ailment.[6]

Stretching and mobilisation exercises are used to increase plantar fascia mobility and flexibility in the lower extremities during plantar fascia physical therapy. [7]A form of physical therapy method, therapeutic ultrasonography, is used to soften the plantar fascia at the back of the heel. There are several types of orthotic devices that may be used to treat a wide range of conditions, from improving the mechanical control of the lower limbs to providing insoles for shock absorption.[8] The plantar fascia may be relieved of discomfort with the use of oral NSAIDs, which suppress cyclooxygenase-2. Radiation therapy is used to minimise inflammation in the treated region of the heel. The plantar fascia insertion zone is treated with high pulse SW energy in SW therapy, which may help mend the degenerative tissue in the plantar fascia.[9]

Because of its potent anti-inflammatory properties, corticosteroids may hasten the process of pain alleviation. Using an injection of corticosteroid, which inhibits fibroblast proliferation and ground-substance protein production, plantar fasciitis may be alleviated. Botulinum toxin, injected into the plantar fascia and gastrocnemius-soleus muscle complex, may lower plantar fascia tension and relax the muscles.[10] By increasing platelet growth factors, PRP helps the body's natural healing process, which in turn speeds up the plantar fascia's recovery time. As a last resort, surgical techniques, such as the fasciotomy for plantar fascia release [11,12], are typically reserved in

patients with prolonged intractable heel pain after having received previous therapies.

Our study's goal was to see whether corticosteroid injections helped individuals with plantar fasciitis in reduction of their discomfort.

**MATERIAL AND METHODS**

This descriptive study was conducted at orthopaedic n trauma department of Mardan Medical Complex, Mardan for the duration of 6 months from January 2021 to June 2021 and comprised of 60 patients. Age, gender, and BMI were all recorded after informed written permission obtained from those who were volunteer to participate. Patients with a history of prior steroid injection or platelet derived plasma (PRP) injection were excluded.

The patients ranged in age from 20 to 70. One ml of triamcinolone (@Kenacort) was combined with 1 ml of 2 percent ordinary xylocaine and injected into each patient under aseptic conditions. The injection was administered using the palpation approach to the heel's most painful spot. As a day case, the procedure was completed quickly. Three days of tablet Paracetamol 1 TDS was given to all patients who came to the OPD for follow-up appointments. Assessment and mean VAS score were calculated at the time of presentation and at subsequent visits. The full data set was analyzed using the SPSS 24.0 edition. Categorical variables were assessed by frequencies and percentages.

**RESULTS**

Most of the cases were males 38 (63.3%) and rest 22 (36.7%) were females. Age with mean standard deviation was 37.55±17.13 years and had body mass index 25.13±10.43 kg/m<sup>2</sup>.(table 1)

Table 1: Characteristics of enrolled cases

Variables	Frequency	Percentage
Mean Age (years)	37.55±17.13	
Mean BMI (kg/m <sup>2</sup> )	25.13±10.43	
Gender		
Female	22	36.7
Male	38	63.3

Majority of the patients 21 (35%) were from age group 20-30 years followed by age group 31-40 in 18 (30%) cases, 12 (20%) cases had age group 41-50 and remaining 9 (15%) were in age group >50 years.(fig 1)

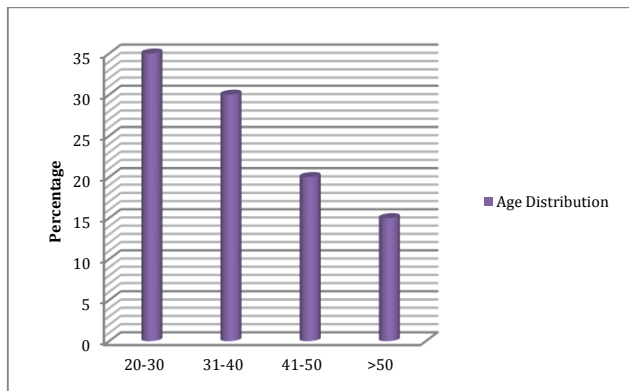


Figure 1: Age distribution of enrolled cases

Pre injection mean pain score was 7.34±7.5 reduced to 1.03±4.9 after nine months of follow up. Recurrence of pain was found among 2 (3.3%) cases. (table 2)

Table 2: Reduction in pain score and recurrence rate among enrolled cases

Mean Pain Score (VAS)	Frequency	Percentage
At start	7.34±7.5	-
After 3 weeks	5.07±3.11	-
After 6 weeks	3.03±6.24	-
After 9 weeks	1.03±4.9	-
Recurrence of pain		
Yes	2	3.3
No	58	96.7

**DISCUSSION**

Though frequently utilized, corticosteroid injections had some possible side effects. When many injections are administered, the risk for injury to the medial plantar nerve, plantar fascia rupture, and atrophy of the fat pad increases. Some doctors have tried to identify an alternative first-line treatment for plantar fasciitis by evaluating the current options and comparing them to injections of corticosteroids. A combination of corticosteroid injections and physiotherapy has been shown to produce excellent therapeutic results [13]. Physiotherapy and exercises are often recommended before surgical intervention [14, 15]. For the treatment of plantar fasciitis, Tatli [16] proposed a combination of steroid injections and stretching exercises. The plantar fascia can be targeted more precisely using ultrasound, according to him.

In this descriptive study 60 patients of both genders were presented. Most of the cases were males 38 (63.3%) and rest 22 (36.7%) were females. Age with mean standard deviation was 37.55±17.13 years and had body mass index 25.13±10.43 kg/m<sup>2</sup>. These findings were comparable to the previous researches.[17,18] Majority of the patients 21 (35%) were from age group 20-30 years followed by age group 31-40 in 18 (30%) cases, 12 (20%) cases had age group 41-50 and remaining 9 (15%) were in age group >50 years.[19] Pain reduction was found to be greater with the CSI treatment than it was with insole use after one month of treatment, according to Yucel et al.[20]. However, trials comparing orthoses and CSI for plantar fasciitis are limited. Patients with acute or chronic soft tissue pain are routinely administered oral NSAIDs, however current evidence does not support their efficacy in the treatment of plantar fasciitis. A randomized, prospective, placebo-controlled trial found no statistically significant differences in pain reduction between the placebo and oral NSAID groups after 1, 2, or 6 months of treatment. [21]

In our study pre injection mean pain score was 7.34±7.5 reduced to 1.03±4.9 after nine months of follow up. Recurrence of pain was found among 2 (3.3%) cases. 150 patients with plantar fasciitis were treated with steroid injection by Ahmad and Kumar[22], who found that the pre-injection VAS was reduced from 9.48 to 2.52 during the 12-week follow-up. Using Triamcinolone injection and autologous blood injection, Shakir and colleagues [23] treated 50 patients with plantar fasciitis in a randomised trial. With steroid injection VAS was 2.741.34 at 8 weeks, whereas VAS was 4.282.08 with autologous blood injection (P 0.05) at final follow-up. These injections were tested

against autologous blood and corticosteroid injections in a three-arm research by Kiter et al. [24]. Prior to administering injections, all three groups received prilocaine 1 mL. While all three groups (65 percent –68 percent) demonstrated progress from the start of the study, the results indicated no clear distinctions between them. Corticosteroid injection alone had a considerably higher VAS score for heel pain than the peppering approach, according to a second four-arm trial conducted by Kalaci et al[25]. The research by Kalaci et al. was not included in this review since it employed a random sample of patients instead of randomization.

## CONCLUSION

In this study we concluded that corticosteroid injection in reducing the intensity of pain in patients with plantar fasciitis was effective and useful with only 3.3% recurrence rate.

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